What is claimed is:

1. A method for facilitating robust revision control of components of a system, the
method comprising:

storing a plurality of system components under revision control in a master

repository, according to internal names;

storing, under revision control in the master repository, a binding between the

internal name of each of the plurality of system components and its

corresponding external name;

storing, under revision control in the master repository, attributes concerning

system components;

storing, in the master repository, a journal of operations performed on system

components;

responsive to a user performing an operation on at least one system component

according to its external name, updating the journal accordingly; and

responsive to a user indication, updating the revision control system to include a

new version of its contents reflecting a change-set of operations consisting

of all operations performed by the user on system components since a

previous indication from the user.

2. The method of claim 1 wherein updating the revision control system to include a new

version of the system components further comprises:

reading the journal to determine which operations have been performed by the

user on system components since the previous indication from the user;

5   determining the internal names of affected system components;

6   updating affected system components in the revision control system according to

7   the user performed operations;

8   updating the journal to reflect processing of the user indication; and

9   associating a new version number with a resulting state of the revision control

10   system.

1   3. The method of claim 2 wherein updating the revision control system to include a new

2 version of the system components further comprises:

3   updating the stored bindings to reflect at least one change to at least one external

4   name of at least one affected system component made by at least one user

5   operation.

1   4. The method of claim 2 wherein updating the revision control system to include a new

2 version of the system components further comprises:

3   updating the stored attributes to reflect at least one change to at least one attribute

4   concerning at least one affected system component made by at least one

5   user operation.

1   5. The method of claim 2 wherein updating the revision control system to include a new

2 version of the system components further comprises:

3   modifying the affected system components in the master repository to reflect the

4   performed user operations.

1   6. The method of claim 1 wherein storing a plurality of system components further

2   comprises:

3   storing at least one system component from a group of system components

4   consisting of:

5   a symbolic link;

6   a file; and

7   a directory.

1   7. The method of claim 1 wherein storing attributes concerning system components

2   further comprises:

3   storing at least one attribute concerning at least one system component from a

4   group of attributes consisting of:

5   a deletion indicator;

6   an owner;

7   a group;

8   a type;

9   a version number;

10   a mode; and

11   security settings.

1   8. The method of claim 1 further comprising:

2   storing, in the master repository, a indication of a next available internal name;

3   and

4   updating the indication accordingly as internal names are assigned to system

5   components.

1   9. The method of claim 1 further comprising:

2   providing at least one user with a user working area, each user working area

3   comprising a working copy of the master repository, in which a user can

4   perform operations on system components; and

5   only providing users access to system components in user working areas,

6   according to their external names.

1   10. The method of claim 9 wherein storing a binding between the internal name a system

2   component and its corresponding external name further comprises:

3   storing a binding between a constant number used to refer to the system

4   component in the revision control system and a variable character string

5   used to refer the system component by at least one user, in at least one

6   user working area.

1   11. The method of claim 9 wherein updating the revision control system to include a new

2   version of the system components reflecting a change-set further comprises:

3   synchronizing the user working area from which the user made the indication with

4   the master repository.

1   12. The method of claim 9 wherein responsive to a user performing an operation on at

2   least one system component according to its external name, updating the journal accordingly

3   further comprises:

4   updating the journal to indicate to indicate that the user has performed an

5   operation on at least one system component from a group of operations

6   consisting of:

7   adding at least one system component to the master repository;

8   backing a change-set out of the master repository;

9   changing a group of at least one system component;

10   changing a mode of at least one system component;

11   changing an owner of at least one system component;

12   adding a comment concerning at least one journal entry;

13   editing at least one system component;

14   modifying linking information concerning at least one system component;

15   deleting at least one system component from the master repository;

16   un-deleting at least one system component in the master repository;

17   renaming at least one system component; and

18   undoing at least one earlier performed user operation.

1   13. The method of claim 9 further comprising:

2   responsive to a request from a user in a working area, providing the user with data

3   from a group of data consisting of:

4   at least one entered change-set;

5   differences between two versions of a system component;

6   information concerning at least one system component;

7   a location of the user's working area;

8   a listing of system components currently checked out for editing;

9   a requested revision of a system component; and

10   a path to a root of the master repository.

1   14. The method of claim 9 further comprising:

2   responsive to a user request, synchronizing the user working area from which the

3   user made the request with the master repository.

1   15. The method of claim 9 further comprising:

2   requiring a user to check a system component out of the master repository for

3   editing before performing a modifying operation on the system

4   component.

1   16. A computer readable medium containing a computer program product for facilitating

2   robust revision control of components of a system, the computer program product comprising:

3   program code for storing a plurality of system components under revision control

4   in a master repository, according to internal names;

5   program code for storing, under revision control in the master repository, a

6   binding between the internal name of each of the plurality of system

7   components and its corresponding external name;

8   program code for storing, under revision control in the master repository,

9   attributes concerning system components;

10   program code for storing, in the master repository, a journal of operations

11   performed on system components;

12   program code for, responsive to a user performing an operation on at least one

13   system component according to its external name, updating the journal

14   accordingly; and

15   program code for, responsive to a user indication, updating the revision control

16   system to include a new version of its contents reflecting a change-set of

17   operations consisting of all operations performed by the user on system

18   components since a previous indication from the user.

1   17. The computer program product of claim 16 wherein the program code for updating

2   the revision control system to include a new version of the system components further

3   comprises:

4   program code for reading the journal to determine which operations have been

5   performed by the user on system components since the previous indication

6   from the user;

7   program code for determining the internal names of affected system components;

8   program code for updating affected system components in the revision control

9   system according to the user performed operations;

10   program code for updating the journal to reflect processing of the user indication;

11   and

12   program code for associating a new version number with a resulting state of the

13   revision control system.

1   18. The computer program product of claim 17 wherein the program code for updating

2   the revision control system to include a new version of the system components further

3   comprises:

4   program code for updating the stored bindings to reflect at least one change to at

5   least one external name of at least one affected system component made

6   by at least one user operation.

1   19. The computer program product of claim 17 wherein the program code for updating

2   the revision control system to include a new version of the system components further

3   comprises:

4   program code for updating the stored attributes to reflect at least one change to at

5   least one attribute concerning at least one affected system component

6   made by at least one user operation.

1   20. The computer program product of claim 17 wherein the program code for updating

2   the revision control system to include a new version of the system components further

3   comprises:

4   program code for modifying the affected system components in the master

5   repository to reflect the performed user operations.

1   21. The computer program product of claim 16 further comprising:

2   program code for providing at least one user with a user working area, each user

3   working area comprising a working copy of the master repository, in

4   which a user can perform operations on system components; and

5   program code for only providing users access to system components in user

6   working areas, according to their external names.

1   22. The computer program product for claim 21 wherein the program code for updating

2   the revision control system to include a new version of the system components reflecting a

3   change-set further comprises:

4   program code for synchronizing the user working area from which the user made

5   the indication with the master repository.

1   23 The computer program product for claim 21 further comprising:

2   program code for requiring a user to check a system component out of the master

3   repository for editing before performing a modifying operation on the

4   system component.

1   24. A computer system for facilitating robust revision control of components of a

2   system, the computer system comprising:

3   a software portion configured to store a plurality of system components under

4   revision control in a master repository, according to internal names;

5   a software portion configured to store, under revision control in the master

6   repository, a binding between the internal name of each of the plurality of

7   system components and its corresponding external name;

8   a software portion configured to store, under revision control in the master

9   repository, attributes concerning system components;

10   a software portion configured to store, in the master repository, a journal of

11   operations performed on system components;

12   a software portion configured to, responsive to a user performing an operation on

13   at least one system component according to its external name, update the

14   journal accordingly; and

15   a software portion configured to, responsive to a user indication, update the

16   revision control system to include a new version of its contents reflecting a

17   change-set of operations consisting of all operations performed by the user

18   on system components since a previous indication from the user.

1   25. The computer system of claim 24 wherein the software portion configured to update

2   the revision control system to include a new version of the system components further

3   comprises:

4   a software portion configured to read the journal to determine which operations

5   have been performed by the user on system components since the previous

6   indication from the user;

7   a software portion configured to determine the internal names of affected system

8   components;

9   a software portion configured to update affected system components in the

10   revision control system according to the user performed operations;

11   a software portion configured to update the journal to reflect processing of the

12   user indication; and

13   a software portion configured to associate a new version number with a resulting

14   state of the revision control system.

1   26. The computer system of claim 25 wherein the software portion configured to update

2   the revision control system to include a new version of the system components further

3   comprises:

4   a software portion configured to update the stored bindings to reflect at least one

5   change to at least one external name of at least one affected system

6   component made by at least one user operation.

1   27. The computer system of claim 25 wherein the software portion configured to update

2   the revision control system to include a new version of the system components further

3   comprises:

4   a software portion configured to update the stored attributes to reflect at least one

5   change to at least one attribute concerning at least one affected system

6   component made by at least one user operation.

1   28. The computer system of claim 25 wherein the software portion configured to update

2   the revision control system to include a new version of the system components further

3   comprises:

4   a software portion configured to modify the affected system components in the

5   master repository to reflect the performed user operations.

1   29. The computer system of claim 24 further comprising:

2   a software portion configured to provide at least one user with a user working

3   area, each user working area comprising a working copy of the master

4 repository, in which a user can perform operations on system components;

5 and

6 a software portion configured to only provide users access to system components

7 in user working areas, according to their external names.

1 30. The computer system of claim 29 wherein the software portion configured to update

2 the revision control system to include a new version of the system components reflecting a

3 change-set further comprises:

4 a software portion configured to synchronize the user working area from which

5 the user made the indication with the master repository.

1 31 The computer system of claim 29 further comprising:

2 a software portion configured to require a user to check a system component out

3 of the master repository for editing before performing a modifying

4 operation on the system component.